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WESTERN INDIAN OCEAN TRAINING ON VULNERABILITY ASSESSMENT, SCENARIO PLANNING, AND ADAPTATION – SUMMARY REPORT

MAY-JUNE 2014

July 2014

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1. INTRODUCTION

BACKGROUND AND CONTEXT FOR TRAINING

In February 2012, through the Adaptation Partnership[1], 39 participants representing nine Western Indian Ocean (WIO) countries and non-governmental organizations from throughout the region and the United States convened in Cape Town, South Africa to identify climate change capacity building needs for coastal and marine protected areas (MPAs) in the WIO region. The priorities that emerged at the Climate Change Workshop for Coastal and Marine Protected Areas included:

- Understanding climate change – Effectively responding to climate change in marine and coastal areas in the WIO region will necessitate improving understanding of climate stressors as well as their consequences and interactions with non-climate stressors.
- Improved data and information – Better data and information tools, including a standardized methodology for baseline data collection, can help strengthen MPA managers' knowledge of the potential impacts of climate change on key resources in the region.
- Education and awareness – This includes development of an educational and training program for MPA managers in the region to better understand the potential impacts of climate change on their resources, as well as tools they can use to raise awareness of climate change issues and build support for MPAs among policymakers and communities.
- Vulnerability assessment – Training and assessment tools are required to strengthen capacity among MPA managers to assess vulnerability to climate and non-climate stressors.
- Alternative livelihoods – Options and ways to promote a greater understanding of alternative livelihoods to build the resilience of vulnerable coastal communities, including through education, training, and incentives.

To respond to these priorities, the United States National Oceanic and Atmospheric Administration (NOAA) and the Western Indian Ocean Marine Science Association (WIOMSA) proposed a capacity building program that starts with three trainings to help cover the first four bullets above, as well as a mentor or training of trainer program to provide regional marine resource practitioners with the knowledge, skills, and techniques to take over the program in 3-5 years. With the support of the United States Agency for International Development (USAID), the first training, on Understanding and Communicating Climate Change, took place in Grahamstown, South Africa from November 19-23, 2013. The mentor training (November 15-18) preceded the training course and provided the 12 mentors with tools for facilitating participatory trainings and advance in depth exposure to the curricula for Understanding and Communicating Climate Change. The second mentor training and training course on Vulnerability Assessment, Scenario Planning, and Analyzing Adaptation Strategies took place in Zanzibar, Tanzania from May 31-June 6, 2013. During this training, participants built upon what they

[1] The Adaptation Partnership was established in 2010 by Costa Rica, Spain, and the United States. Its goal is to promote action and communication for effective adaptation among the various actors working on scaling up adaptation and resilience efforts globally. Since 2010, over 50 developing and developed countries have participated in the Partnership to identify shared adaptation priorities and needs, and enhance coordination of adaptation response and financing efforts. More information can be found at: http://www.adaptationpartnership.org/.

had learned in the first training about climate change impacts, climate information, and communicating climate change to better understand how to assess vulnerability to climate change, develop adaptation strategies, and engage stakeholders and communities.

OBJECTIVES

The objectives of the Vulnerability Assessment, Scenario Planning, and Analyzing Adaptation Strategies Training were to:

- Review how a changing climate can impact our coastal communities, explore the relationship of community resiliency to MPAs in the WIO region, and understand the relevance of community resiliency to climate adaptation
- Understand the significance of communities as a source of climate change and adaptation information and explore methods for obtaining information from communities
- Understand the concept of assessing vulnerability of resources in MPAs and the role of each component - exposure, sensitivity, and adaptive capacity – in that assessment
- Explore the use of scenario planning and scenario narratives as an alternate or additional tool to vulnerability assessment in order to envision what a plausible future could look like for a given MPA in the context of a changing climate
- Understand that the selection of adaptation strategies is based on the ability of the actions to meet the goals and objectives, but that the selection must also factor in feasibility and practical considerations, and anticipate implementation challenges prior to being undertaken.

The objectives of the mentor program preceding the Vulnerability Assessment, Scenario Planning, and Analyzing Adaptation Strategies Training were to:

- Familiarize mentors with training agendas and materials to enable them to take on increasing roles and responsibilities for training delivery (e.g., facilitating exercises and plenary sessions), preparing them eventually to become course instructors.

PROFILE OF PARTICIPANTS

The 11 mentors and additional 20 participants who attended the training came from eight countries in the WIO region (Comoros, Kenya, Madagascar, Mauritius (including Rodrigues), Mozambique, Seychelles, South Africa, and Tanzania). Two participants from outside the region (Maldives and Egypt) were invited to facilitate cross-regional learning and to build off the reef resilience program undertaken by The Nature Conservancy and NOAA in June 2013. The positions that mentors and participants hold include environmental researcher, research scientist, warden, marine biologist, marine scientist, program coordinator, and conservation officer/manager. Most individuals work directly for MPAs either through their government or a non-governmental organization. However, some participants work for organizations that support MPAs. A list of participants is included in Annex B.

RESULTS

Overall results of the training program are expected to include:

- The network established through the training facilitates the exchange of knowledge and experiences on managing climate and non-climate stressors that MPAs throughout the region face

- The mentor program results in a cadre of local experts who can continue to build capacity to understand and respond to climate change issues in marine and coastal areas in the WIO region, even after the training program has come to an end

- Continued engagement of many of the participants in subsequent trainings will enable them to deepen their understanding of climate change issues, building a broader base of regional capacity to address climate change considerations in coastal and marine areas in the WIO

- The roadmaps, in which participants articulate the actions they expect to take over the next year in relation to the topics covered in the training, encourage application of training concepts to participants' work, and sharing what they have learned with colleagues

- MPA practitioners better understand and are able to address climate and non-climate stressors, reduce vulnerability, and increase resilience, enabling them to manage their MPAs more effectively

- MPA practitioners understand several climate change communication, planning and assessment tools enabling them to manage their MPAs more effectively.

II. MENTOR TRAINING

DAYS 1 AND 2

The two-day mentor training was used to familiarize the mentors with the agenda and materials for the training, to identify opportunities for their engagement, and to practice and prepare for their roles. Upon completion of the overview of the agendas for the four days of the training, the 11 mentors split into two groups. Each group worked with a pair of instructors to review the presentations and activities in detail for two of the four days of the training. Mentors were then given the opportunity to choose exercises to present or plenary discussions to facilitate, or to serve as lead facilitators for a particular day of training. Once assignment of mentor roles was finalized, instructors met with mentors one-on-one to provide them with detailed explanations of the content they were responsible for and the process involved in the relevant session. During this time, mentors were also able to ask clarifying questions and to practice presenting the portions of the training for which they were responsible.

III. VULNERABILITY ASSESSMENT, SCENARIO PLANNING, AND ANALYZING ADAPTATION STRATEGIES

DAY 1 – INTRODUCTION AND THE EFFECTS OF NON-CLIMATE AND CLIMATE STRESSORS ON TARGET RESOURCES

INTRODUCTION AND OVERVIEW

Day 1 of the training started with an introduction and welcome by Tim Andrew of WIOMSA; Anas Othman, representing the Menai Bay Conservation Area and Tanzania's MPAs; Yoon Kim on behalf of USAID's Climate Change Resilient Development Project; and Mary Sue Brancato of NOAA. This was followed by an overview of the four-day training, including the curriculum structure and course schedule. Next, the four instructors, three logistics coordinators, and 31 participants, including the 11 mentors, introduced themselves. Participants stated their name, country, MPA or organization, and one or two of the most significant challenges facing their MPA or organization. Many participants named similar challenges, the most prevalent being rising sea surface temperature, sea level rise, storm surges, erosion, and coral bleaching.

Upon completion of the introductions, the group then established ground rules for the training, facilitated by mentors, to ensure that all participants adhered to the same guidelines regarding conduct throughout the training. The group also shared their expectations and hopes for the training. The division of table groups was explained, and each table group was assigned a MPA they would focus on as a team during the training exercises. The five teams represented MPAs in Madagascar, Zanzibar, Kenya, Comoros, and South Africa. The teams each picked a name and representative or rapporteur who would provide the group's feedback to the instructors and mentors in the debrief at the end of each day.

PARTICIPANT POSTER SESSION – GALLERY WALK

In the second portion of Day 1, participants presented the posters they had prepared on their MPAs, based on the homework from the first training in November 2013. Their presentations provided an overview of the habitat and target resources in their MPAs, identified non-climate stressors and their effects on target resources, identified current and future climate stressors, evaluated how climate variability and change affect target resources, and presented issue statements for target resources.

Exhibit 1 - Participant Allen Cedras presenting on his MPAs during the gallery walk

CLIMATE CHANGE IN THE WIO

Following the poster session, Dr. Tim Andrew presented on the status of current and expected changes in climate in the WIO region and some potential impacts.

At the end of Day 1, each participant received a road map booklet to be completed by the end of the training.

DAY 2 – COMMUNITY RESILIENCE AND COMMUNITY DATA GATHERING TOOLS

COMMUNITY RESILIENCE TO CLIMATE CHANGE

Day 2 began with a presentation on community resilience to climate change. The presentation covered the definition of coastal community resilience, the need for and importance of resilient communities, characteristics of resilient communities, and community strengths and vulnerabilities. Two case study videos of community resilience in Hawai'i and a case study presentation on vulnerability, resilience, and Hurricane Sandy in New York were also presented and discussed by participants. The next session was a World Café activity in which participants, working in their teams, identified opportunities and barriers to enhancing community resilience in the WIO region in the areas of awareness, institutions, natural or "soft" options, ability and willingness to act, and marginalized groups/populations. To complement the World Café activity, a brief presentation and discussion of common opportunities and barriers to resilience followed.

QUICK VULNERABILITY ASSESSMENT

As an exercise, participants conducted a quick vulnerability assessment in which they identified the most vulnerable resources/assets to climate change in their individual MPAs and the factors contributing to vulnerability. Participants then shared and discussed the results of this exercise and identified common vulnerabilities across MPAs.

Exhibit 2 – Participants discussing the results of their quick vulnerability assessments

GATHERING INFORMATION FROM LOCAL COMMUNITIES

The second portion of Day 2 focused on data gathering in local communities. The presentation on methods for collecting information from local communities covered interviews, focus groups, timelines/seasonal calendars, participatory mapping, and community activities. The presentation was followed by a case study by Dr. Omar Makame. Dr. Makame shared his experience engaging local communities in the village of Matemwe, Zanzibar to obtain information on climate variability, change and vulnerability.

Participants then prepared for the field visit during which they would engage fishermen from villages in the Menai Bay Conservation Area, a local Zanzibar MPA. Working in their teams, participants determined what information they needed to collect, identified the data collection methods they would use to engage the community, prepared questions to ask, gathered needed materials, and assigned team member roles and responsibilities.

FIELD TRIP

Between Days 2 and 3 of the training, WIOMSA arranged a field trip. The purpose of the field trip was threefold. Firstly to give participants an opportunity to learn about an alternative income generating activity in an area adjacent to a local MPA. This involved visiting the Seaweed Centre, a socially-oriented company established to provide support to women who previously made use of the intertidal zone for the harvest of marine organisms for food. The women have been organized into a collective and have

ownership in the company. They farm seaweed in the lagoon close to their villages and the Centre assists in providing processing facilities to enable the manufacture of spa products from the seaweed. This value addition enhances the women's income earning abilities and provides them with an alternative to relying on the highly fluctuating global prices paid for raw dried seaweed.

The visit to the Centre allowed participants in the training to interact with the staff of the facility and discuss opportunities and challenges afforded by this approach to development of local communities. Seaweed farming provides an alternative to traditional use of the intertidal zone, and can potentially reduce pressure on this ecosystem, particularly in the face of increasing impacts of climate change. Warming temperatures in the lagoon ecosystem have also had an impact on this alternative activity, prompting farms to move to deeper, cooler waters. The visit allowed participants to explore options for encouraging communities living within and adjacent to their home MPAs to engage in sustainable alternatives, indirectly benefitting the MPA management process by reducing pressure within the protected area.

Exhibit 3 – Participants during the visit to the Seaweed Centre at Paje on the east coast of Zanzibar

The second purpose of the field trip was to allow participants to better understand a local MPA (Menai Bay Conservation Area), its resources, and the impacts of climate and non-climate stressors on the MPA's resources. Participants were briefed on the functioning of the conservation area by the MPA manager (one of the participants) and a senior ranger, and were able to discuss issues around management of the MPA with these staff members.

The third purpose of the field trip was to allow participants the opportunity to try out the community engagement skills learned in the classroom on Day 2. A group of sixty fishers and seaweed farmers from villages close to the MPA were asked to assist with this process. Community members were split into

four smaller groups, and training participants were assigned to work with a group. Each group of trainees had prepared the day before to practice a variety of participatory information gathering techniques. An hour and a half was spent by each group using two different techniques to interact with the community members and record information obtained. The trainee groups then reported back on the results of their exercises during dinner in the evening.

Overall the day was full and varied, and complimented the theoretical aspects covered in the classroom.

Exhibit 4 – Participants interact with community members during the community engagement practical exercises at Menai Bay Conservation Area headquarters on the south coast of Zanzibar

DAY 3 – ASSESSING VULNERABILITY AND SCENARIO PLANNING

ASSESSING VULNERABILITY

The first portion of Day 3 focused on assessing vulnerability. In the opening presentation, participants were introduced to the concept of uncertainty in climate change, key vulnerability terms, and vulnerability assessments. This was followed by a case study presentation on the World Wildlife Fund's (WWF) vulnerability assessment process in Madagascar, given by the mentor Volanirina Ramahery. In addition to summarizing key ecosystem vulnerabilities from the Diana, Menabe, Melaky, and Astimo Andrefana regions, she discussed the importance of effectively managing non-climate stressors to improve the resilience of habitats and species populations as well as of increasing the adaptive capacity of communities that are heavily reliant on natural resources. Lessons learned through WWF's vulnerability assessment process in Madagascar include: 1) collaboration between institutions with complementary competencies and local communities is critical, 2) participatory methods in developing the assessment process, validating data, and identifying adaptation strategies are essential to ensuring

ownership, lasting impacts, and successful partnership, and 3) adaptation is a continuous process that entails regular monitoring and adjustment.

Participants were then given the opportunity to assess the exposure, sensitivity, adaptive capacity, and overall vulnerability of their table MPA's target resources, using the climate information that was compiled as part of the homework assignment. The vulnerability assessment exercise was followed by the "Happy Village" role play exercise, which allowed participants to explore the challenges of and opportunities for developing integrated adaptation options that consider the vulnerabilities of human communities, species, and ecosystems.

SCENARIO PLANNING

The second portion of Day 3 started with an overview presentation on developing scenario narratives. The presentation familiarized participants with the definition and purpose of scenario narratives; illustrative social, political, and economic drivers; and a process for linking scenario narratives to desired objectives, outcomes, and adaptation strategies. The next exercise provided participants with the opportunity to develop scenario narratives to grapple with possible futures for their table MPA, and included identification and assessment of climate and non-climate drivers or stressors and consideration of their direct and indirect impacts.

DAY 4 – ADAPTATION AND IMPLEMENTATION CONSIDERATIONS

ADAPTATION

The morning of Day 4 was spent on adaptation, and commenced with a presentation covering principles for adaptation and different types of adaptation strategies from USAID's *Climate Change and Coastal Zones: An Annex to the USAID Climate-resilient Development Framework* (forthcoming, 2014). The mentor Allen Cedras then gave a brief summary of climate trends and impacts in the Seychelles and offered some examples of adaptation relevant initiatives that have been carried out, including coral farming and relocation. In the next session, participants delved into an exercise in which they identified their table MPA's adaptation goals and objectives and possible adaptation strategies to reduce the vulnerabilities identified on Day 3. This was followed by an exercise allowing participants to evaluate adaptation strategies based on a set of pre-established criteria.

IMPLEMENTATION CONSIDERATIONS

On the afternoon of Day 4, a closer look was taken at implementation as well as monitoring and evaluation. The afternoon's first presentation highlighted implementation challenges and options for overcoming these challenges, including the importance of mainstreaming. The next exercise gave participants the opportunity to consider these issues in greater depth for the adaptation strategies they had identified earlier in the day. The focus then shifted from implementation to monitoring and evaluation, with a presentation on process-based monitoring and evaluation using benchmarks, which discussed the benefits and elements of evaluation. In the exercise that followed, participants developed benchmarks, action steps, and assessment questions. The final session of the day gave table groups the opportunity to report out on the adaptation planning models they had developed for their MPAs through the day's exercises. The training concluded with participants completing course evaluations and their personal road map booklets after receiving feedback from the trainers.

IV. EVALUATIONS

To assess the effectiveness of the mentor training and training on Vulnerability Assessment, Scenario Planning, and Analyzing Adaptation Strategies, as well as to gather information to inform development of subsequent trainings, participants were asked to complete evaluation forms. Highlights from the evaluation results for both the mentor and participant trainings are described in greater detail below. The full evaluation summaries prepared by WIOMSA can be found in Annex C.

Evaluations covered the categories of: communications prior to the training , course content, presentation of material, working with their team, implementation of lessons learned, ocean literacy, climate literacy, aspirations, and final thoughts. All 11 mentors and 20 participants completed the course evaluation. Highlights and key takeaways are:

- On course content, the three areas that were most applicable to participants' work were assessing vulnerability to climate change (20 respondents), planning for adaptation to climate change and adaptation strategies (17 respondents), and building community resilience (10 respondents).
- Other topics that participants would have liked covered, but were not part of the training were case studies of coping and adaptation strategies particularly for local communities, data scanning and modeling tools, and data processing and analysis.
- The participants felt there was an overall improvement in the organization of the training folder, and appreciated having the presentations on Google drive as it gave them the opportunity to review the presentations before the training.
- Suggestions for improving the training included:
    - Greater time to read and grasp the course material
    - More case studies from projects implemented in the WIO region
    - Fewer exercises, so more time could be spent on those the participants felt were most relevant
    - Instructors, rather than mentors, leading participants through exercises and examples
    - Hard copies of the presentations for all participants.
- On the length of the training, over half the participants (52%) felt that the training was too short and that the schedule was too demanding (61%). About 75% of the respondents thought that the timing for each activity was too short. There was a comment that the training should be seven, rather than five, days. However, increasing the length of the training would have to be balanced against work considerations and the budget available for training.
- Participants would have liked to spend more time on the topics of: vulnerability assessment, building community resilience, adaptation planning development and models, and adaptation strategies.
- Overall, participants were happy with the presentation of materials (100%) and the interactive nature of the training (97%). Eighty-nine percent of participants found the case studies to be helpful, and indicated a desire for more regional case studies. Thirty of the participants believed the overall quality of instruction was good.
- Fifty-five percent of the respondents indicated that they had been able to establish new links through the training and would be communicating and sharing information and lessons learned within the group and in their home organizations.

- Seventeen participants thought that they could develop a planning team and document or revise their existing climate change adaptation plan within a year of the training. Ninety-six percent of respondents have aspirations to work on developing a climate change plan. The additional resources that many participants indicated they needed to support planning for climate change in their home MPAs were financial and human resources (11 respondents), data (5 respondents), and expertise (4 respondents).
- Vulnerability assessment was thought to be the most valuable part of the training for 11 participants; other important aspects were adaptation planning and implementation. The most valuable skills learnt at the training included assessing vulnerability (7 respondents), community mapping, building community resilience, and scenario narratives.
- All 31 respondents indicated that they would recommend the training to someone they knew.
- For the next training on tools for monitoring and assessing climate change, participants noted topics and tools that they would like covered in the training. They include: tools for measuring sea level rise, means for determining the best material and software for mapping, data sources on sea surface temperatures, information on changes in ocean acidification and sea level rise, means to use satellite data to determine climate change impacts for MPAs, and tools for identifying climate change stressors.

ANNEX A. TRAINING AGENDAS

Planning for Climate Change in the Coastal and Marine Environment

TAKING INVENTORY OF WHERE WE ARE NOW – TARGET RESOURCES AND THE EFFECTS OF NON-CLIMATE AND CLIMATE STRESSORS: DAY 1

Western Indian Ocean MPA Management Capacity Building Training – 2014

Time	Content	Materials
08:30 - 09:00 09:00 - 09:30 09:30 -10:30	**INTRODUCTION & WELCOME** ▪ Local MPA Director welcome ▪ WIOMSA, USAID, NOAA, **COURSE OVERVIEW** ▪ Team structure ▪ Curriculum structure ▪ Course schedule **PARTICIPANT INTRODUCTIONS: What is One Main Challenge Regarding Climate Change for Your MPA or Organization?** • Share with the participants your name, country, MPA or organization • Briefly state ONE main climate change challenge your MPA or organization faces *Objective: to understand some of the climate change challenges that MPAs and organizations in the region are already experiencing.*	Poster 1.1: *Planning for Climate Change - Overview of Process* Flipchart and pens
BREAK		
10:45-11:30	**GROUND RULES, TEAM NAMES, TEAM REPRESENTATIVES, TEAM MPA SELECTION, EXPECTATIONS (HOPES & FEARS)**	

	TAKING INVENTORY	
11:30-12:30	**PARTICIPANT POSTER SESSION – GALLERY WALK:** • Overview of MPA – habitats, identification of target resources • Identification of non-climate stressors and their effects on target resources • Identification of current and future climate variation and change • Evaluation of how climate variation and change stresses target resources • Issue statements for target resources *Objective: to gain exposure to the target resources and habitats at MPAs throughout the WIO and some of the threats they face in terms of non-climate and climate stressors.*	*Homework and Poster Template Provided Prior to Training (completion of modified versions of worksheets 2.1, 2.2, 2.3 and 2.4 for at least 5 target resources). Map of MPA if possible.* *Timing will depend on number of MPAs represented* *– as many MPAs that prepare will be presented*
	LUNCH	
13:30 -13:45	**ENERGIZER**	
13:45 – 15:15	**PARTICIPANT POSTER SESSION – GALLERY WALK continued**	
	BREAK	
15:30 -16:00	**PRESENTATION 1.1: Climate Change in the WIO (overview)** *Objective: to reiterate the status of current and expected changes in climate in the WIO region and some of the potential impacts.*	
16:00 – 16:45	**FLEX SPACE**	
16:45 – 17:15	**WRAP-UP:** and bridge to Day 2 • Introduction to road map • Debrief procedure	

20:30	**VIDEO (optional)**	

RESULTS OF DAY 1	
OUTCOMES	• An understanding of how changes in climate variables can impact MPA habitats, ecosystems, species and human communities in the WIO region
OUTPUTS	• Existing non-climate and climate challenges, threats and opportunities MPAs in WIO face

Planning for Climate Change in the Coastal and Marine Environment

COMMUNITY RESILIENCE & COMMUNITY DATA GATHERING TOOLS: DAY 2

Western Indian Ocean MPA Management Capacity Building Training – 2014

Time	Activity	Materials
08:30 – 08:45	**REVIEW: Day 1**	
08:45 – 9:15	**PRESENTATION 1.2: Community Resilience to Climate Change** ▪ What is coastal community resilience? ▪ Need for resilient communities ▪ Characteristics of resilient communities ▪ Strengths and vulnerabilities of communities *Objective: to review how a changing climate can impact our coastal communities and the relationship of community resiliency to MPAs in the WIO*	Electronic File *USAID Community Resilience Guidebook*
9:15 - 10:00	**WORLD CAFE: Opportunities and Barriers to Enhancing Community Resilience in the Western Indian Ocean**	*flip chart and pens*

Time	Activity	Materials
10:00 – 10:30	**<u>CASE STUDY PRESENTATION:</u> Community Resilience Project –** <u>Objective</u>: *to understand the fundamental concepts of community resilience, it's relevance to climate adaptation, and how community resilience relates to MPAs in the WIO*	(Pacific Island Presentation and discussion)
BREAK		
10:45 - 11:45 11:45 – 13:00	**<u>EXERCISE 1.1</u>**: **A Quick Assessment of Vulnerability** • Individually complete Worksheet 1.1. • Discuss with team – did you come up with similar answers? <u>Objective</u>: *to give a first look at a* **<u>EXERCISE: Detailed VA</u>**	**Adam** <u>Worksheet 1.1:</u> *A Quick Assessment of Vulnerability*
LUNCH		
14:00 – 14:20	**ENERGIZER**	
14:20 – 15:15	**<u>EXERCISE 1.1 and DETAILED VA</u>: Report out**	
BREAK		
15:30 – 15: 50	**<u>PRESENTATION 2.2</u>: Approaches for Gathering Information from Local Communities** ▪ Conducting interviews ▪ Focus group discussions ▪ Timelines/Seasonal calendars ▪ Participatory mapping ▪ Community activity/exercise	

Time	Activity	Materials
15:50 – 16:05 16:05 – 17:15	**<u>CASE STUDY PRESENTATION:</u> Gathering Data from the Community** *Assessing vulnerability, leading to a more detailed approach.* **<u>EXERCISE 2.3 – Part A:</u> Preparing for Gathering Information From Local Communities** Work together in teams to prepare for a community visit: ▪ Determine what information you need ▪ Determine what methods you are going to use to get this information from the community ▪ Prepare specific questions (keep in mind the climate change issue statements and community resiliency concerns) ▪ Assign team member roles and responsibilities ▪ Gather materials needed for site visit <u>Objectives:</u> *to understand that communities have a significant amount of information about historical impacts, trends and adaptive responses to change; and to explore using some of the methods for obtaining specific information from communities.*	<u>Handout 2.1:</u> *Climate Witness Toolkit (WWF)* <u>Handout 2.2</u>: *Gathering Information From Communities* *Field Exercise with Community Groups*
17:15 – 17:30	**<u>WRAP-UP & BRIDGE TO DAY 3</u>**	
20:30	**<u>VIDEO</u> (optional)**	

RESULTS OF DAY 2	
OUTCOMES	• Understanding of community vulnerability and resiliency • Learning several tools that can be used to gather information from communities
OUTPUTS	• Plan for community data gathering activity • Revised climate change issue statements

Planning for Climate Change in the Coastal and Marine Environment

ASSESSING VULNERABILITY & SCENARIO PLANNING: DAY 3

Western Indian Ocean MPA Management Capacity Building Training – 2014

Time	Content	Materials
08:30 – 08:45	**REVIEW: Day 2**	
08:45 - 09:10	**PRESENTATION 3.1: Introduction to Vulnerability Assessments** ▪ Uncertainty ▪ Need for vulnerability information ▪ Exposure, sensitivity and adaptive capacity ▪ Methods for conducting assessments	*Guest or Participant Speaker*
09:10 – 09:40	**CASE STUDY PRESENTATION: Example of How Vulnerability Assessment Has Been Used in WIO**	Poster/Worksheet 3.1:
09:40 -10:40	**EXERCISE 3.1: Assessing Vulnerability → Exposure + Sensitivity - Adaptive Capacity** With your team, complete Worksheet 3.1 ▪ Task1: Assess the degree of exposure of your target resources/assets to climate change ▪ Task 2: Assess the sensitivity of your target resources/assets to climate change ▪ Task 3: Evaluate the adaptive capacity of your target resources/assets ▪ Task 4: In viewing the results of tasks 1-3, determine the vulnerability of your target resource ▪ Complete this process for each of the two climate scenarios for each of the five target resources/assets ▪ Each team will report out in plenary	*Exposure+Sensitivity-Adaptive Capacity = Vulnerability (Poster/Worksheet instructions are separate from poster)* Poster: *Vulnerability Grid*
BREAK		
10:55 –12:25	**EXERCISE 3.1: Assessing Vulnerability → Exposure + Sensitivity - Adaptive Capacity - continued**	

12:25 – 13:25	**<u>EXERCISE 3.4</u>: Happy Village – Exploring Integrated Approaches for Climate Change Adaptation** **Part 1: Exploring Adaptation Options and Identifying Conflicts** **Part 2: Developing Common Solutions** *<u>Objective</u>: to understand the importance of developing integrated adaptation options that consider the vulnerabilities of human communities, species and ecosystems.*	*Not in Notebooks* <u>Handout 3.1</u>: *Happy Village Scenarios for Adaptation (stakeholder group descriptions will be provided to each team*
LUNCH		
14:25 -14:45 14:45 – 15:00 15:00 - 16:45	**<u>ENERGIZER</u>** (food chain and/or ocean processes visioning) **<u>PRESENTATION 3.2:</u> Developing Scenario Narratives** *<u>Objective</u>: to understand the fundamental concept of exposure, sensitivity, and adaptive capacity and how uncertainty factors into the assessment of vulnerability* **<u>EXERCISE 3.3</u>: Developing Scenario Narratives** Work together in teams to complete Worksheet/Poster 3.2 ▪ Step 1: Create list of drivers and determine their importance and certainty (20 min). ▪ Step 2: Use the matrix method to develop concepts for your scenario narratives (40 Min). ▪ Step 3: Draft the direct impact portion of your scenario narrative either as bulleted items or as a story (15 min) ▪ Step 4: Brainstorm indirect impacts – the "so what" of the direct impacts and add these in narrative or bullet form to your scenario narratives (30 min) ▪ In plenary, the group will listen to see if the future you describe is plausible (30 min) *<u>Objective:</u> to grapple with what a plausible future could look like for your MPA, and based on that, determine adaption goals and outcomes you hope to achieve through adopting adaptation*	<u>Worksheet/Poster 3.2:</u> *Developing Scenario Narratives*

	strategies.	
BREAK		
17:00 -17:30	**PRESENTATION 3.3: Planned Adaptation to Climate Change in the Coastal Zone** ▪ Adaptation principles ▪ Coastal adaptation strategies ▪ Mechanism/criteria needed for prioritizing and evaluating adaptation strategies ▪ *Optional case study – after exercise*	
17:30 – 17:45	**WRAP-UP & BRIDGE TO DAY 4**	
20:30	**VIDEO (optional)**	

RESULTS OF DAY 3	
OUTCOMES	• An understanding of how scenario planning is a method for addressing uncertainty • Knowledge of a process for conducting a vulnerability assessment
OUTPUTS	• An assessment (rating) of the vulnerability of target resources, assets or ecosystems • Scenario narratives of plausible futures for the MPAs.

Planning for Climate Change in the Coastal and Marine Environment

ADAPTATION AND IMPLEMENTATION CONSIDERATIONS: DAY 4

Western Indian Ocean MPA Management Capacity Building Training – 2014

Time	Content	Materials
08:30 – 08:45	**REVIEW: Day 3**	

08:45 – 09:15	**<u>CASE STUDY PRESENTATION :</u> Analysis of Adaptation Strategies**	*Guest Speaker*
09:15 – 09:45	**<u>CASE STUDY PRESENTATION :</u> Implementation of Adaptation Strategies – Coral Transplants in the Seychelles**	*Allen*
09:45 – 10:30	**<u>EXERCISE 4.1</u>: Identifying Potential Adaptation Strategies – Task 4** Work together in teams to complete Worksheet/Poster 3.2 Task 4. ▪ Task 4: Identify potential adaptation strategies *<u>Objective</u>: to understand that the selection of adaptation measures is based on the ability of those measures to meet the goals. In addition, there are other practical considerations that need to be taken into account.*	<u>Handout 4.1:</u> *Building Resilience and Resistance* <u>Handout 4.2</u>: *Summary of Adaptation Strategies-USAID* <u>Handout 4.3</u>: *USAID Annex A – Adaptation Measures* <u>http://pdf.usaid.gov/pdf_docs/PNADO614.pdf</u> <u>Handout 4.4</u>: *Quick Reference-Adaptation Strategies* <u>Handout 4.5</u>: *Adaptation Definitions*
BREAK		
10:45 -11:15	**<u>EXERCISE 4.1</u>: Identifying Potential Adaptation Strategies – Task 4 – continued**	
11:15 -13:00	**<u>EXERCISE 4.2</u>: Analysis of Adaptation Strategies** Work together with teams on Worksheet 4.1 ▪ For one target resource/asset, transfer one goal,	<u>Worksheet 4.1:</u> *Analysis of Adaptation Strategies*

	outcome or issue from Worksheet/Poster 3.2 to Worksheet 4.1. ▪ Transfer one to three strategies for this goal, outcome or issue from Worksheet/Poster 3.2 to Worksheet 4.1. ▪ Comment on how the strategy fits the evaluation criteria. ▪ Repeat this process for each or your target resources or assets. *<u>Objective:</u> to use a prioritization process to help decide which adaptation strategies should be undertaken when and why, how some strategies might complement one another or provide a synergistic benefit.*	
LUNCH		
14:00 – 14:15	**<u>ENERGIZER</u>**	
14:15 – 14:30	**<u>PRESENTATION 4.1</u>: Implementation Challenges** ▪ Mainstreaming adaptation measures ▪ Barriers to implementation ▪ Overcoming barriers ▪ Measuring effectiveness	
14:30 – 16:00	**<u>EXERCISE 4.3</u>: Implementation Opportunities and Challenges – Turning Strategies into Action** Work with team to complete Worksheet 4.2 ▪ Implementation challenges can come in many forms – identify which of those provided are particular challenges for each adaptation strategy ▪ What will be done to overcome the challenges? ▪ Go through the questions in Worksheets 4.1 and 4.2 to help you determine a ranking for the strategy. ending with giving it an overall rating between 1 (low) to 5 (high value, level of support, benefit). *<u>Objective:</u> to anticipate what some of the implementation challenges might be before starting adaptation actions in*	<u>Worksheet 4.2:</u> *Implementation Opportunities and Challenges*

	order to possibly circumvent some of those challenges.	
16:00 -16:15	**PRESENTATION 4.2: Learning to Adapt – Process-Based Monitoring and Evaluation Using Benchmarks** ▪ Need for monitoring and evaluation ▪ Indicators ▪ Process-based approach to evaluate effectiveness ▪ Benchmarks, action steps, assessment questions (e.g., road map) ▪ Benchmark themes/planning model process step	
BREAK		
16:30 -17:00 16:30-17:15	**EXERCISE 4.4: Developing Benchmarks, Action Steps and Assessment Questions** *Objective: understanding whether adaptation actions are working is important but challenging with the uncertainty involved. Benchmarks with action steps provide a process-based system to help evaluate progress.* **TEAM PRESENTATIONS: Adaptation Planning Models** ▪ 30 minutes preparation ▪ 10 minutes each team for presentation ▪ Present one narrative, one goal, one outcome ▪ Analysis of adaptation strategies for one goal/outcome and how implementation opportunities/challenges factored into decision ▪ Benchmarks *Objective: to provide an opportunity for each team to present their planning model and to receive input from the other teams.*	Worksheet 4.3: *Developing Benchmarks, Action Steps and Assessment Questions* Handout 4.6: *Example Benchmarks for Resilience*
17:15 – 18:00	**ROAD MAP & COURSE EVALUATION**	
18:00 -18:30	**WRAP-UP & GAME**	

19:30	**BANQUET**	

RESULTS OF DAY 4	
OUTCOMES	• Knowledge of some of the barriers to adaptation and some ways to overcome the barriers • Factors to consider when selecting adaptation strategies • An understanding of the importance of analyzing adaptation strategies prior to undertaking them • The potential for bundling and mainstreaming adaptation strategies • An understanding of the challenges you can expect to encounter in implementing a climate change plan • An understanding of monitoring and evaluating adaptation effectiveness using progress-based evaluation
OUTPUTS	• Definition of goals and outcomes for adaptation • A framework or road map for developing or continuing momentum on a climate change plan

ANNEX B. PARTICIPANT LIST

	Name	Organization/Department	Country
1	Fredrick Tamooh	Kenya Wildlife Service, Mombasa	Kenya
2	Sylvia Paulot	Blue Ventures Conservation	Madagascar
3	Mr. J. P. Luchmun	Marine Conservation Division, Mauritius	Mauritius
4	Allen Cedras	Seychelles National Parks	Seychelles
5	Ane Oosthuizen	South African National Parks	South Africa
6	Keith Spencer	Cape Nature	South Africa
7	Mr. Amin Abdallah	Marine Parks & Reserves Unit	Tanzania
8	Jairos Mahenge	Marine Parks & Reserves Unit	Tanzania
9	Housseni Madi Houssoyni	General Directorate of Environment and Forests	Comoros
10	Volanirina Ramahery	WWF Madagascar & Western Indian Ocean	Madagascar
11	Ulrike Kloiber	CHICOP	Zanzibar
12	Marcos Pereira	Centro Terra Viva (CTV)	Mozambique
13	Anfani Msoili	Gouvernorat de l'Ile Autonome de Mwali, Union des Comores	Comoros
14	Mouchitadi Madi Bamdou	Parc marin de Mohéli	Comoros
15	Lailina Daniel	Parc marin de Mohéli	Comoros
16	Jean Rex	South East Marine Protected Area	Rodriques
17	Albert Gamoe	Kenya Wildlife Service	Kenya
18	Mark Kinyua	Kenya Wildlife Service	Kenya
19	Patteson Mwagona	Kenya Wildlife Service	Kenya
20	Fridah Obare	Kenya Wildlife Service	Kenya
21	Jillo Katelo	Kenya Wildlife Service	Kenya
22	Jean Baptiste Zavatra	Masoala Marine Park, Madagascar National Parks	Madagascar
23	Yacinthe Razafimandimby	Conservation International (Ambodivahibe MPA)	Madagascar
24	Toky Nirimamy Voajanahary	Soariake Marine Reserve, WSC Madagascar	Madagascar
25	Sivanee Munaroo	Marine Conservation Division, Albion Fisheries Research Centre	Mauritius
26	Haji Mahingika	Mafia Island Marine Park	Tanzania
27	January Ndagala	Marine Parks & Reserves Unit	Tanzania
28	Anas Masoud Othman	Menai Bay Conservation Area	Zanzibar
29	Miguel Goncalves	Ponta do Ouro Partial Marine Reserve	Mozambique
30	Yoosuf Rilwan	Marine Research Centre	Maldives
31	Islam Elsadek	Egyptian Environmental Affairs Agency	Egypt

ANNEX C. TRAINING EVALUTION SUMMARIES

VULNERABILITY ASSESSMENT, SCENARIO PLANNING, AND ANALYZING ADAPTATION STRATEGIES TRAINING EVALUATION SUMMARY

Planning for Climate Change in the Coastal and Marine Environment

Assessing Vulnerability to Climate Change, Scenario Planning and Evaluating Adaptation Strategies

EVALUATION FORM

Zanzibar, Tanzania

02-06 June 2014

NAME OF THE MPA(S) YOU ARE ASSOCIATED WITH (optional):

COMMUNICATIONS PRIOR TO THE TRAINING

Read each statement below and circle the response that matches how much you agree or disagree with that statement.

Overall, participants felt that communication prior to the training was good. Specific responses are indicated below.

Q1: Information about the training was communicated in a timely manner for each phase of my preparation (e.g., acceptance, travel requirements).	Strongly Agree	Agree	Neither	Disagree	Strongly Disagree
	14	16	1		
	45%	51%	3%		
Q2: Communications received prior to the training were clear and set the proper expectation for what I was going to experience.	Strongly Agree	Agree	Neither	Disagree	Strongly Disagree
	11	17	2	1	
	36%	54%	7%	3%	
Q3: The welcome packet was helpful in preparing me for my travel and experiences during the training.	Strongly Agree	Agree	Neither	Disagree	Strongly Disagree
	20	9	2		
	65%	29%	6%		

Q4: What other information could you have used prior to departing from home/office to make your experience at the training better?

From the comments below, it appears that not all participants accessed google drive to acquaint themselves with the course content and agenda though emails were sent by Mary Sue Brancato (NOAA) and Tim Andrews (WIOMSA) on this.

Comments:

- None, communication on homework MPA map was great.
- None
- Distance of training relative to shopping center/town, social places
- Information needed on traveling arrangements and training content was made well ahead, well done to instructors and WIOMSA
- Info provided prior to departure was useful, good organization with consultation of participants before booking flights. Good logistics. Everything was helpful
- Training dates should consider availability of flights from MPA sites, Masoala MPA only has a weekly flight
- Collection of local climate related data locally if available and information on MPA
- Feedback on homework should have been done
- Info was enough and useful
- More information about exercises in particular so as to refer to materials where necessary.
- An idea of the topics to be covered. The activities, program and scope of program. Provide

baseline information on the course content to help better awareness and preparation for the training. Agenda information was not received
- Vulnerability assessment of target resources

Q5: Is there another manner staff could have communicated with you better before the training?

Comments:

- While using mentors is a noble idea, while passing on information, it is important that the instructors take the entire group through the process using relevant examples before embarking on the exercises
- No, not really. Email was enough and very quick but sometimes we are in the field and unable to respond on time so telephone contact will be necessary if urgent responses are required.
- All information was received in good time. Only assignment bit came late when we were already prepared
- Some information about the course content
- Communication was appropriate

COURSE CONTENT

Q6: What were the top three (3) topical areas that are most applicable to your work?

1. Climate and none climate change impacts
2. Assessing vulnerability to climate change (20)
3. Planning for adaptation to climate change/Adaptation planning/adaptation strategies (17)
4. Adaptation implementation challenges and considerations (6)
5. Approaches for gathering information from local communities (7)
6. Tackling vulnerability
7. Building Community Resilience (10)
8. Development of scenarios linked to climate change (6)
9. Understanding climate change impacts
10. All areas are applicable (3)
11. Poster presentation of climate stressors on resources
12. Developing a process based monitoring and evaluation system using benchmarks
13. Exploring data resources and data gaps

Q7: Are there other topics you would have liked to cover that were not part of this training course?

1. Case studies of coping strategies/adaptations particularly for local communities and alternative livelihoods in the face of climate change
2. Data scanning/modeling tools (2)
3. Variety of examples on scenarios/case studies
4. Implementation using a wide variety of examples/scenarios
5. Data gap analysis for respective MPAs with participants providing guidelines on information gaps
6. Full example of methodology for one of the common WIO region MPA targets

7. Climate witness
8. Writing funding proposals for MPAs
9. Data processing and analysis
10. Case studies of the success of the tools taught in a specific MPA
11. None (20)

Q8: Do you have any suggestions for improving the training material?

1. Too bulky, a lot of work to cover in a short period of time
2. If we can use electronic version of the presentation of the workshop and poster workshop
3. None (15)
4. Provision of more materials
5. Those supplies were adequate and well designed. Materials are comprehensive and well designed.
6. Training materials are OK but more time is required to grasp them all
7. Send assignment prior to training to prepare discussion points in training
8. No, binder is well prepared - an improvement from the last training and the power point presentations were available in advance
9. Include case studies as part of the handouts. Add more case studies from projects that have been implemented in the WIO region. This will help in understanding and open doors for collaboration.
10. Assess the time taken for exercises and remove the less important/relevant agenda items e.g. would have rather spent more time on the exercises rather than Happy Village exercise
11. Having hard copies of the presentation is critical in keeping participants on course back home as they can note important additions in specific slides for reference. If the cost allows and it is not bulky, it definitely adds value to the learning process.
12. Give soft copies alongside the hard copies. Give books materials of the case studies
13. Solicit funds for the sustainability of the program as conservation is a nonstop activity climate change and development in cc studies and challenges will arise so it is important to keep the group updates every now and then.
14. The training was adequate and met real expectations

Q9: The total length of the training was:

Over half the participants felt that the training was too short and that the schedule was too demanding. Just under 75% thought that the timing for each activity was too short. There was a comment that the training should be 7 days as opposed to 5 days but this will have to be balanced out by the time spent away from work and the budget available for training.

Too long		Just right		Too short	
2	7%	13	41%	16	52%

Q10: The training schedule was:

Too relaxed	Too demanding	Just right

2	6%	19	61%	10	32%

Too demanding for some components and just right for others

Q11: The time given for each activity/exercise was:

Just right		Too short		Too long	
7	22%	23	74%	1	4%

Q12: Please list topics you would have liked to spend more time on.

1. Vulnerability assessment (12)
2. Community resilience building (4)
3. Planning for climate change (2)
4. Scenario planning (3)
5. Scenario narratives (3)
6. Adaptation strategies (5)
7. Adaptation planning development and models (6)
8. Criteria for selecting strategies (2)
9. Adaptation implementation challenges and considerations (4)
10. Days 3 and 4. I felt like we wasted time walking on the beach. Perhaps we could have left at 10:00 hours after the morning session.
11. Exercise of worksheets 4.1, 4.2, 4.3
12. Exercises
13. Process based monitoring and evaluation using benchmarks
14. Happy village - exploring integrated approaches for climate change adaptation

PRESENTATION OF MATERIAL

Overall, it appears that the participants were satisfied with the presentation of materials and the interactive nature of the training. Case studies were helpful and a few participants have indicated that more case studies from the WIO region could be included (see comments above for improving training materials). The quality of instruction was thought to be good.

Q13: The information in the training was presented in a manner that I could understand easily.	Strongly Agree	Agree	Neither	Disagree	Strongly Disagree
	12	19			
	39%	61%			
Q14: The binder helped me follow the presentations and exercises.	Strongly Agree	Agree	Neither	Disagree	Strongly Disagree
	14	14	3		
	45%	45%	10 %		
Q15: There was enough variety in the way information was presented.	Strongly Agree	Agree	Neither	Disagree	Strongly Disagree
	14	15	2		
	45%	48%	7%		
Q16: The training was interactive.	Strongly Agree	Agree	Neither	Disagree	Strongly Disagree
	17	13	1		
	55%	42%	3%		
Q17: The case studies provided were helpful.	Strongly Agree	Agree	Neither	Disagree	Strongly Disagree
	14	13	4		
	45%	42%	3%		
Q18: The balance of presenters (instructors/coaches, mentors, guest speakers) was good.	Strongly Agree	Agree	Neither	Disagree	Strongly Disagree
	10	19	1	1	
	33%	61%	3%	3%	

Q19: Overall, how would you rate the quality of instruction?	Excellent		Good		Poor		Extremely Poor
	13	42%	17	55%	1	3%	

WORKING WITH YOUR TEAM

Q20: I feel I have gained new partnerships through the training.	Strongly Agree	Agree	Neither	Disagree	Strongly Disagree
	12	17	2		
	39%	55%	6%		
Q21: I learned something from my team and other fellow participants.	Strongly Agree	Agree	Neither	Disagree	Strongly Disagree
	18	13			
	58%	42%			
Q22: I see advantages in working on planning with other MPA sites from my region.	Strongly Agree	Agree	Neither	Disagree	Strongly Disagree
	16	14	1		
	52%	45%	3%		

Q23: Do you envision on-going communication and sharing of information and lessons learned with others present at this training and/or those at your site/region? If yes, how?

- Yes - work together in capacity building of other staff in my MPA and other MPAs in the country and region.
- Yes - I intend to train my colleagues and community groups on cc and different scenarios
- Perhaps I could email participants for ideas and input if I get stuck somewhere
- Envision yes but steps have to be taken actively. Collaboration in certain areas was discussed during the training but follow up is important to get things going
- Probably only in South Africa and only on strategy to get cc recognized in organizations.
- Yes officially will try within my site and neighboring country through site visits and internal agreements.
- Yes by email
- Yes through communication and sharing of information.
- Yes I would like to organize a meeting with my staff to share information and lessons learnt.
- Yes, will present a report to my staff
- By communicating through email with other participants to discuss issues.
- Yes if there are participants contacting me.
- Some MPAs in the region have better systems than ours.

- Yes, I will share the information during staff development week and also during field work with communities.
- Yes, we share some similar scenarios in some ways and these would be useful points of reference in how to get around challenges if we run short of options.
- Through networking and sharing of information.
- By delivering material to staff in my MPA and trying to develop the management plan and community resilience plan with staff in the Red Sea Protectorates.
- Yes, as a region we share several resources (species and ecosystems) and face similar problems, I will certainly communicate with my colleagues regarding these.
- Yes common forum at MPA Managers Symposium.

IMPLEMENTATION OF LESSONS LEARNED

Q24: What additional resources would you need to support planning for climate change in your MPA?

- More case studies from participating countries. few case studies would be helpful, will search for these online (3)
- Access to relevant e-library for information gathering
- More about resilience.
- Reliable data and information. Scientific literature. Data sources to back up my information. More research cooperation to fill in data gaps (5)
- Website.
- Funding to hold stakeholders meetings just like the Kisimkazi fishermen exercise. Financial resources, introducing the activities in our planning will require some expense that is not planned for in budgets. (11). Human resources
- None.
- Expertise from NOAA and financial support from institution, NOAA , WIOMSA and government. Local expertise to set up a climate change planning team (4)
- Monitoring tools
- Organizational support (2)
- Political goodwill
- More information on SST and SLR in my region
- Technical support from instructors to support the planning for climate change process
- Additional staff, logistics and technical knowhow.
- Considering the rate of poverty.
- GPS, binoculars, scuba diving gear, temperature loggers
- Capacity building for MPA managers

Q25: Do you think you can realistically develop a planning team, planning document or revise your existing plan at your site within a year of the training? If not, why?

- Yes (10)
- No. Issues on the ground are much too complex to be unlocked by knowledge gained in the

short training time.

- Yes, some coaching will be needed but I am confident I can do it.
- For planning team and the planning document yes but time plan, I cannot be sure.
- Yes but will need to set time to discuss it with colleagues and team to be able to introduce the activities in our plan
- Yes, with additional funding to host meetings with stakeholders.
- Yes, working together with colleagues from different MPAS in my country with support from experts in the WIO-Region, NOAA, we can develop a good planning team
- Yes I believe I can but the difficultly lies in the implementation of the plan as this is beyond our authority.
- Yes. Mainstreaming adaptation will be possible. Incorporating vulnerability/climate change impacts in management plan will also be possible.
- Yes. Revising the existing General Management plan can be possibly done within a year.
- No, work load is already planned for the next year plus organizations have more important issues to deal with that consumes all available resources e.g. rhino poaching
- No, there is a lack of supporting staff in the early stages of implementation and a general lack of facilities in the country.
- No, would like more information and more time to train my colleagues.
- No, need more time to achieve/realize the different steps of the planning adaptation to cc.
- No, lack of funding
- Maybe yes, depending on the economic situation.
- No, not that easy but some cc aspects can already be integrated into annual action plan. The general management plan is conservative and subject to revision only every 5 years.
- We have just finished VA and are beginning to implement adaptation strategies.
- No there are limited staff in my department and will need support from other departments.

OCEAN LITERACY

Read each statement below and circle the response that matches how much you agree or disagree with that statement.

One respondent did not complete this section. Over 80% concur that they are aware of how their decisions impact the ocean and that watersheds are a major way through which pollution enters the ocean. A great majority agree that people need the ocean and the ocean needs us although a few query the last bit that the ocean needs us- see comments below. About 8% of the respondents disagree that overfishing is an issue of concern for conservation.

Q26: I am aware of how my everyday decisions impact the ocean.	Strongly Agree	Agree	Neither	Disagree	Strongly Disagree
	12	16	1	1	
	41%	53%	3%	3%	
Q27: Watersheds are a major way through which pollution enters the ocean.	Strongly Agree	Agree	Neither	Disagree	Strongly Disagree
	12	13	4	1	
	41%	43%	13%	3%	
Q28: Over-fishing is a major ocean conservation issue.	Strongly Agree	Agree	Neither	Disagree	Strongly Disagree
	15	10	2	1	2
	50%	33%	7%	3%	7%
Q29: People need the ocean and the ocean needs us.	Strongly Agree	Agree	Neither	Disagree	Strongly Disagree
	18	10	1	1	
	60%	33%	3.5%	3.5%	
Q30: No matter where I live, my actions impact the ocean.	Strongly Agree	Agree	Neither	Disagree	Strongly Disagree
	12	15	3		
	40%	50%	10%		

Comments:

- The ocean doesn't need us- except for us to look at it
- It is questionable that the ocean needs us

CLIMATE LITERACY

Read each statement below and circle the response that matches how much you agree or disagree with that statement.

One respondent did not complete this section. Over 70% percentage agree that people are changing the climate and climate change is real and happening

Q31: People are changing the climate	Strongly Agree	Agree	Neither	Disagree	Strongly Disagree
	22	7	1		
	73%	23%	4%		
Q32: Climate change is real and happening.	Strongly Agree	Agree	Neither	Disagree	Strongly Disagree
	22	6	2		
	73%	20%	7%		

ASPIRATIONS

Read each statement below and circle the response that matches how much you agree or disagree with that statement.
One respondent did not complete this section.

Q33: As a result of the training, I have plans to work with my colleagues to develop a climate change plan.	Strongly Agree	Agree	Neither	Disagree	Strongly Disagree
	13	16	1		
	43%	53%	4%		
Q34: As a result of the training, I have plans to recommend that my organization place a higher priority on planning for climate change.	Strongly Agree	Agree	Neither	Disagree	Strongly Disagree
	18	12			
	60%	40%			

FINAL THOUGHTS

Q35: What part of the training was the most valuable to you and why?

Comments:

- Developing scenario narratives (2)
- Process based monitoring and evaluation using benchmarks- it tells whether or not the objectives have been achieved and challenges one on improving or bridging gaps. (2)
- Vulnerability assessment as it is the base of the rest of the activities such as adaptation planning, adaptation implementation etc. Vulnerability something that I was really looking forward to and I reckon it is badly needed in my country Mozambique. First time I did this (11)
- Preparing adaptation strategy plan (2)

- Everything
- Identifying target resources and assets
- Climate change adaptation plan development
- Building community resilience (2)
- Adaptation planning and implementation, challenges and considerations. We need to start planning for CC in our sites and the lessons learnt on adaptation planning were clear and useful and can be implemented a step at a time (3)
- Goals and objectives will help finalize management plan
- The PHD presentations by Omar and Adam's first presentation
- Presentations, the exercises and the case studies as they made understanding and applying the concepts during the training easy
- Different methods for gathering data from the community
- How to deliver information/message

Q36: What was the <u>most valuable skill</u> you learned at the training?

Comments:

- Planning for climate change impacts
- Presenting as a guest speaker
- Facilitating and leading an exercise
- How to develop components of a management climate adaptation plan- the goal, objective and the strategies and choice of appropriate strategies and considering feasibilities and applicability (2)
- Difference between the goals and objectives (2)
- Community mapping
- Assessing vulnerability (7)
- Community resilience
- Adaptation planning (3)
- Analyzing adaptation strategies (2)
- Ranking vulnerable target resources (2)
- Integrating general sources of information (e.g. communities) is fundamental for a successful plan
- Scenario narratives (2)
- Monitoring effectiveness
- Looking at the "so what" in detail and listening to others and synthesizing information
- Patience and neutrality during facilitation

Q37: Would you recommend this training course to someone you know?

a. definitely yes (21)
b. yes (10)
c. maybe
d. no
e. absolutely not

Q38: Our next training is on Tools for Monitoring and Assessing Climate Change. At the November 2013 training, participants indicated they would like training opportunities on low cost coastal monitoring tools (e.g., shore-based surveys, snorkel surveys, sea level elevation, sea surface temperature) and training on tools for analyzing and presenting data. Are there specific tools you would like to learn more about or questions you would like to answer that may require tools (e.g., How can I determine how much sea level is rising? How can I determine what areas may be affected by sea level rise?)?

Please state your questions or specific tools here so we can better prepare materials for the next training.

- Marine climate stations and basic parameters to monitor
- Training should include more field visits to assess impacts of climate change
- How to determine sea level rising. Tools for determining sea level rise. How can I know that sea level is rising within my MPA- in my MPA there is beach erosion and at the same time new beaches are being formed so is this due to sea level rise or other factors? (4)
- How can I determine the best material and software for mapping?
- All tools mentioned in the 2013 training are very important in gathering and monitoring changes. Together with these, GIS mapping training would be very important in supporting planning and decision making
- Would like to learn how to monitor for change in ocean acidification in the coral reefs and animals living on it
- How to determine whether degradation of reefs is being caused by ocean acidification.
- Are there alternatives to data sourcing for SLR, SST especially where resources are lacking? E.g. data loggers for temperature (2)
- Experiment to assess SLR
- Experiment to assess beach erosion such as accretion.
- Analysis of data collected
- If I do not have enough data, what is the best way to predict CC stressors in my area?
- Simple models to incorporate climate change data/variables would be helpful
- Being able to source and analyze data easily
- Habitat characterization tools/surveys (line intercept?)
- What kind of data do I require to convince Fishers and Women that MPAs are beneficial to community members
- What specific indicators would one be looking for to describe extent of sedimentation
- How can I do modeling of different changes as a result of CC?
- Where can we source data on SST acidification?
- How can we use satellite data to determine climate change impacts for our MPA?
- Tools for monitoring beach ecosystem
- Tools for beach erosion surveys
- Tools for analyzing and presenting data
- Snorkeling survey tools

U.S. Agency for International Development
1300 Pennsylvania Avenue, NW
Washington, DC 20523
Tel: (202) 712-0000
Fax: (202) 216-3524
www.usaid.gov